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Contextual Variations in Negative Mood and State Self-Esteem

What Role Do Peers Play?

Bridget M. Reynolds
Rena L. Repetti
University of California, Los Angeles

This study explores the link between peer problems in school and contextual variations in negative mood and state self-esteem over a 5-day period. Fifth-grade children completed measures of mood and state self-esteem while they were at home in the morning and while they were at school each day, allowing for an examination of whether psychological states change from context to context and whether these changes are influenced by types of peer events that children report experiencing at school. Results indicated that children who experienced more peer problems at school showed, on average, a shift toward more negative mood and lowered state self-esteem from mornings at home to afternoons at school during the week of data collection. Peer problems were also associated with higher levels of negative mood at school after controlling for academic problems but no longer predicted state self-esteem in school when academic problems were controlled.

Keywords: *peer relations; psychological adjustment; context; methodology; adolescent development*

Problems in peer relationships have been associated with a wide array of adjustment difficulties in childhood and adolescence, such as depressed

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mood, anxious mood, and low self-esteem (Hawker & Boulton, 2000; Juvonen & Graham, 2001; Rubin, Bukowski, & Parker, 1998). In this literature, a child's adjustment is viewed as a characteristic that is stable over different contexts and situations. Typical measures of negative mood and self-esteem, for instance, ask children to characterize how they feel in general or how they have been feeling over the past few weeks. While these measures provide important information about a child's general psychological adjustment, they are limited to the extent that they do not assess potentially important fluctuations in mood and self-esteem across contexts. This study of fifth-grade children will examine average shifts in mood and self-cognitions from mornings at home to afternoons at school across a 1-week period. It is expected that children who experience more peer problems at school will show an average shift toward more negative mood and lower state self-esteem from mornings at home to afternoons at school.

Contextual Variations in Mood and Self-Esteem

Research suggests that, starting in middle childhood, youngsters can and do make global judgments about their self-worth. However, children are also capable of making specific self-evaluations across a variety of domains and situations (Kernis, 2005). For instance, Kernis and colleagues distinguish between self-esteem *level* and self-esteem *stability*. Self-esteem level is tapped by measures that ask participants to report on how they typically or generally feel about themselves. Measures of self-esteem stability assess short-term fluctuations in self-esteem and, therefore, are given to participants on multiple occasions. These measures of self-esteem stability, which assess how children feel at the moment, are typically completed within the context of participants' daily lives. It has been shown that children and adults do experience fluctuations in self-esteem across time and various contexts (Kernis, 2005).

While children and adolescents possess an overall sense of self-worth, short-term fluctuations in state self-esteem can and do occur to varying levels among individuals. Similar patterns have been found for ratings of negative mood. For example, studies that have made use of an experience sampling method, in which participants carry pagers and report on emotions at random times when signaled, have shown that there is daily fluctuation in negative affect among children and adolescents (Larson, Moneta, Richards, & Wilson, 2002; Larson & Richards, 1994). Although these studies generally show that variability or instability of daily mood does not increase over the course of adolescence, they do provide evidence for short-term fluctuations

in mood within both children and adolescents from one report to the next. Assessing such fluctuations, in addition to average states, may provide meaningful information about children's psychological health.

Methodological problems involving cognitive processing limitations are also inherent in commonly used measures of psychological adjustment. Children might not be able to accurately recall information about their psychological states and might have difficulty generalizing across multiple situations and time points when describing their "average" or "overall" subjective experiences. Indeed, cognitive scientists have found that even when adult participants are asked to summarize experiences within a particular interval, more recent experiences have a greater influence on recall than more distal ones and that recall of experiences can be influenced by current psychological states (Schwarz & Sudman, 1994). These cognitive constraints have implications for the way that psychologists assess adjustment.

One way to address the methodological issues described above is to use intensive repeated measures designs to assess immediate psychological states across different settings. Repeated use of self-report scales over several days and in different contexts allows for an examination of how children's psychological states might change from one setting to another. Thus, a repeated measures design allows for an assessment of fluctuations or variations in mood and self-esteem. Moreover, this methodology demands less of children's memory and information processing skills compared with methods that ask children to recall and characterize weeks of experiences across different situations and social contexts. The current study utilizes such a methodology to explore the link between reports of peer problems in school and contextual variations in negative mood and state self-esteem over a 1-week period. Children completed measures of mood and state self-esteem both while they were at home in the morning and while they were at school each day, allowing for an examination of whether children's psychological states vary from one context to another and whether these changes are associated with the types of peer events that children report experiencing while at school.

Peer Problems and Psychological Distress

The literature on peer problems in childhood and adolescence has developed along several distinct trajectories. Two of the most prominent lines of research in this area involve peer rejection and peer victimization. Peer rejection is assessed using sociometric nomination measures that ask all of the students in a classroom to name the classmates they like most and the

classmates they like least. Rejection from peers has been associated, both concurrently and longitudinally, with a number of adjustment difficulties in children and adolescents (Rubin et al., 1998). Although the construct of peer rejection provides important information about general peer attitudes toward individual children and predicts mental health outcomes, it is limited to the extent that it does not address the actual interpersonal experiences that rejected children face on a daily basis (Sandstrom & Cillessen, 2003). Peer victimization, on the other hand, is commonly measured by asking children to report on their own or their classmates' experiences of peer maltreatment, such as being teased, laughed at, physically threatened, or excluded from a group. A large body of literature has linked peer victimization with a number of adjustment difficulties, including depression, anxiety, and low self-esteem (Hawker & Boulton, 2000). This research has provided important information about how peer factors might contribute to children's overall mental health. However, to the extent that measures of peer victimization ask children to report on "typical" peer experiences or on events that occurred within an extended time interval, they are also subject to reporting errors and biases similar to those described above. The intensive repeated measures approach taken in this study complements common measures of peer problems by providing information about the specific difficulties that children experience with peers on a day-to-day basis (Pellegrini & Bartini, 2000; Ralph, Williams, & Campisi, 1997).

We hypothesized that children who report more peer problems at school during the week would also report higher levels of negative mood and lower levels of state self-esteem at school that week, independent of morning reports of negative mood and state self-esteem taken at home. Thus, children who experience high levels of peer problems while they are at school are expected to show, on average, a shift toward more negative mood and lower self-esteem from their mornings at home to their afternoons at school across the week of data collection. The current study also builds upon and adds to the extant literature by examining whether peer problems have a unique association with state self-esteem and negative mood by also taking into account other negative events that occur in school, such as academic problems.

It could be the case that some children experience a variety of negative events at school, such as problems with teachers, difficulty learning, and conflicts with peers. In fact, in a different sample, Repetti (1996) found that children tended to report peer problems and academic problems on the same day. Thus, it is possible that some children regularly experience many stressful school events and that the psychological impact of these experiences

may be equivalent. In this study, the unique contribution of peer-related difficulties to the prediction of negative mood and state self-esteem in school will be assessed after controlling for negative academic events that occurred at school, such as receiving a bad grade on a test, making a mistake in class, or having trouble learning something new. It is hypothesized that the association between peer problems and psychological distress at school will be significant even after controlling for these other types of difficulties.

The Current Study

Fifth-grade students completed self-report measures of peer problems twice a day during school for 5 consecutive days. Items composing the peer problems measure were similar to self-report peer victimization items and were completed by children each day during school hours. Negative mood and state self-esteem were measured at the same time that peer problems were assessed. Mood and state self-esteem were also assessed each morning at home, shortly after participants woke up. The analyses reported here were based on participants' mean scores, averaged across the entire week, of peer problems at school, morning psychological states at home, and school psychological states.

This study examined the average differences in state between how children felt at home in the morning and how they felt at school, during the week of data collection. Some children may show no change, some may show a shift in a positive direction, and some a shift toward more negative mood and feelings of less competence and self-worth. This study tests the proposition that reports of negative social experiences at school during the week would be associated with an average decline in mood and state self-esteem from the home context to the school context.

Method

Participants

The fifth-grade children (mean age = 10.9 years) who participated in the current study were part of a 3-year longitudinal study of work and family issues in dual-earner families that began when the children were in fourth grade ($N = 248$ families). To be invited to participate in the study described here, any parent living with the child had to be employed at least part-time and had to have participated in the 1st year of the study, when the child was in fourth grade. Thus, if a child's parent(s) met these inclusion requirements,

he or she was invited to participate in the current study. A total of 112 children met these requirements and were invited to participate in the current study. Parental consent and child assent were obtained from 83 of these children (47 male, 36 female), reflecting a 74% participation rate. Participants were drawn from two public elementary schools and one parochial school in a large metropolitan area in the Western United States. No differences were found between school types in the findings reported here, nor were there school differences in participant factors such as the ratio of male to female participants. The sample consisted of children from primarily high income, well-educated families. A majority of the families were of middle to high socioeconomic status; 61% reported annual incomes greater than $80,000, and 37% of mothers (51% of fathers) had a degree beyond college. Approximately 80% of the participants were Caucasian, 10% Latino, 4% Asian American, and 2% African American.

Procedure

Home visits were scheduled within a week of a child's participation in the study. During the visits, children were instructed on how to fill out each daily report form. They were asked to complete self-report forms three times a day for 5 consecutive weekdays. The first report, which assessed mood and state self-esteem, was completed at home in the morning, before the children left for school. The second and third reports were completed in the classroom; the second report was completed shortly before lunch period and the third was completed just before the children left school for the day. On both the second and third reports, children again responded to the mood and self-esteem measures and also reported on positive and negative events that had occurred at school since they completed their previous report that day.

A number of steps were taken to increase compliance with the daily data collection procedures. First, each child received a beeper watch that was programmed to signal an alarm when it was time to fill out a report. These signals were set to sound just before lunch and at the end of the school day, in accordance with each student's school schedule. Second, each day, children were reminded to complete the morning report by their parents, who were also participating in the study. Third, a reminder call was made by a research assistant to each child every evening of the study to see if everything went well with the reports that day and to answer any questions that may have arisen. If a child did not fill out a report on time, he or she was explicitly instructed not to complete that particular form and to return it to the researchers blank. Finally, participants were given preaddressed, stamped

envelopes for returning their reports at the end of each day. They were also given the option of storing their envelopes in a special carrying case that was collected at the end of the week. Most children chose the latter option.

Measures

The children used a 4-point response scale (1 = *a definitely false statement*, 2 = *a mostly false statement*, 3 = *a mostly true statement*, 4 = *a definitely true statement*) to rate how accurately each statement on the self-report forms described their morning at home before school, morning at school, and afternoon at school. All but one of the measures were taken from the Youth Everyday Social Interaction and Mood (YES I AM) scales (Repetti, 1996; Repetti & Wood, 2000). Mood and school events were assessed using the YES I AM scales. State self-esteem was assessed using a measure developed specifically for the current study.

In the following discussion, the terms "morning negative mood at home" and "morning state self-esteem at home" represent each child's average morning rating of these variables across the 5 days of the study. The terms "school negative mood," "school state self-esteem," "peer problems," and "academic problems" represent each child's rating of these variables first averaged over the two reports completed during school each day, and then averaged over the week. See Table 1 for descriptive statistics on each variable.

School events. Twice each day at school, children completed measures of their experiences in the social and scholastic realms: peer problems (five items; e.g., "I felt that my friends didn't want to be around me") and academic problems (five items; e.g., "I received a bad grade on a test or paper). The school events measures had acceptable internal consistency; across readings, Cronbach's alpha ranged from .77 to .88 for the Peer Problems scale and from .74 to .82 for the Academic Problems scale.

In order to examine the validity of the school events scales, scores on these measures were compared to scores on measures administered during the year as part of the larger longitudinal study. Children's reports of peer problems were negatively related to scores on the Social Competence/Social Acceptance subscale of the Self-Perception Profile for Children, $r(82) = -.43$, $p < .001$, a widely used instrument to assess children's perceived competence in various domains (Harter, 1985). Peer problems scores were also significantly related to children's scores on the Asher Loneliness Scale, $r(82) = .45$, $p < .001$ (Asher & Wheeler, 1985). Children's reports of academic problems negatively correlated with scores on the Scholastic Competence subscale of Harter's Self-Perception Profile for Children, $r(82) = -.48$, $p < .001$.

Table 1
Descriptive Statistics for Outcome and Predictor Variables

Variable	$\bar{X}$	*SD*	Obtained Range
Morning measures ($N = 83$)			
Morning negative mood at home	1.35	0.41	1.00–2.68
Morning state self-esteem at home	3.49	0.45	1.64–4.00
School measures ($N = 83$)			
School negative mood	1.36	0.44	1.00–2.87
School state self-esteem	3.51	0.46	1.81–4.00
Peer problems	1.42	0.48	1.00–3.93
Academic problems	1.53	0.50	1.00–3.00

Note: Morning variables were averaged across all 5 morning reports, and school variables were averaged across all 10 school reports over the week of data collection. The response scale for all measures ranged from 1 to 4 (1 = *definitely false*, 2 = *mostly false*, 3 = *mostly true*, 4 = *definitely true*).

Negative mood. At each reading, the children completed a 10-item measure of negative mood. Six of these items assessed anxious mood (e.g. "I felt tense") and four items tapped depressed mood (e.g. "I was sad"). Cronbach's alpha for the negative mood scale ranged from .88 to .90 across readings, suggesting that the measure had acceptable internal consistency. In order to examine the validity of the negative mood scale, scores on this measure were compared to scores on the Children's Depression Inventory (CDI; Kovacs, 1985), which was administered during the same year as part of the larger longitudinal study. Both morning negative mood scores, $r(82) = .46$, $p < .001$, and school negative mood scores, $r(82) = .45$, $p < .001$, were significantly correlated with scores on the CDI. As can be seen in Table 1, the mean scores for negative mood were relatively low. For example, the average score of 1.35 for morning negative mood indicates that, on average, children did not report much negative mood in the morning at home.

State self-esteem. Children completed a 16-item State Self-Esteem measure at each of the three daily readings. Several of the items comprising this measure were taken from existing scales (e.g., Buchanan, 1991; Heatherton & Polivy, 1991; Piers, 1977), while other items were written specifically for this study. The original pool of 16 self-esteem items completed by children in this study was reduced to 10 items based on a series of principal component analyses (Lehman & Repetti, 2007). The resulting measure had acceptable internal consistency, with Cronbach's alpha ranging from .83 to .85 across

readings. Two of the items described feelings (e.g., "I felt proud"), three assessed general beliefs about the self (e.g., "I wish I were different"), and five focused on domain-specific self-concepts (scholastic competence, two items; social competence, two items; and family relations, one item). The mean scores for self-esteem reported in Table 1 indicate that, on average, children reported relatively high levels of state self-esteem. Morning and school state self-esteem were significantly correlated with the Global Self Worth Scale of Harter's Self-Perception Profile for Children, $r(82) = .49$, $p < .001$; $r(82) = .42$, $p < .001$, respectively. Thus, while global measures of self-esteem are correlated to a large extent with state measures of self-esteem, there does appear to be some differentiation between these two constructs.

Results

The analyses presented here assess associations between children's reports of negative events that occurred at school and subjective states at school. This study examined the average change in state from how children felt at home in the morning to how they felt at school, during the week of data collection. We test whether the kinds of social experiences a child described at school during the week could account for his or her average home-to-school shift in mood and self-esteem. The main analysis tests whether children who report higher levels of peer problems at school during the week also report higher levels of negative mood and lower levels of self-esteem at school that week, independent of their morning home reports of mood and self-esteem. Additional analyses control for other negative events at school (i.e., academic problems) in the prediction of negative mood and self-esteem in school. We also consider how subjective states described at home relate to reports of academic and social problems at school. Descriptive information will be presented before describing the results of these analyses.

Descriptive Information

Frequency of peer problems. Across the entire week, 57 out of 83 (69%) children responded to at least one of the peer problem items with a 3 (*a mostly true statement*) or a 4 (*a definitely true statement*). Of these children, 39 (68%) responded with a 3 or a 4 on more than one day, and 29 (51%) did so on 3 or more days during the week. Thus, it appears that a significant number of children reported at least some problems with peers during the week of data collection.

Correlations between variables. Correlations in this study can be viewed in two distinct ways. First, the association between two different constructs measured in the same context can be assessed (e.g., the correlation between morning negative mood at home and morning state self-esteem at home). Second, we can assess the correlation between the same constructs measured in different contexts (e.g., the association between morning negative mood at home and school negative mood). As can be seen in Table 2, strong correlations were observed between all of the variables. However, it should be noted that the correlations between the same constructs measured in different contexts were much higher than the correlations between different constructs measured in the same context. For example, the correlations between morning negative mood at home and school negative mood, $r(82) = .89$, $p < .001$, and morning state self-esteem at home and school state self-esteem, $r(82) = .91$, $p < .001$, were particularly strong. Thus, on average, there appeared to be little contextual variability in these measures. Children's reports of negative events at school were also highly correlated: Peer problems were positively associated with academic problems, $r(82) = .60$, $p < .001$. In other words, children who reported more problems with peers in the school context also tended to report more academic problems in that context. Although this correlation is strong, it should be noted that it is not as strong as the correlations between the same constructs measured in different contexts. Each correlation between the same constructs measured in different contexts was significantly higher than the correlations between different constructs measured in the same context. For example, the correlation between morning negative mood at home and school negative mood ($r = .89$) was significantly higher than both the correlation between peer problems and academic problems ($r = .60$) ($z = 5.48$, $p < .001$) and the correlation between morning negative mood at home and morning state self-esteem at home ($r = -.59$) ($z = 5.50$, $p < .001$).

Multicollinearity was a concern given the high correlations reported above. Although the statistical package we used to analyze our data (SPSS) checks for multicollinearity as a default, we also utilized a more conservative test for multicollinearity, as described in Tabachnick and Fidell (2001), by examining tolerance levels and variance inflation factors. Tolerance is an indication of the percentage of variance in a predictor that cannot be accounted for by the other predictors in the model. A variance inflation factor (VIF) is simply the inverse of tolerance. The analyses reported here were all within acceptable tolerance and VIF levels, as recommended by Tabachnick and Fidell.

Table 2
Correlations Between Negative Mood, State Self-Esteem, and School Event Variables (N = 83)

	1	2	3	4	5
Control variables					
1. Morning negative mood at home	—				
2. Morning state self-esteem at home	–.59**	—			
Outcome variables					
3. School negative mood	.89**	–.54**	—		
4. School state self-esteem	–.63**	.91**	–.66**	—	
Predictor variables					
5. Peer problems	.65**	–.49**	.78**	–.58**	—
6. Academic problems	.65**	–.42**	.73**	–.57**	.60**

**$p < .001$.

Links Between Peer Problems and Contextual Variations in Psychological Distress

Our first goal was to test the association between reports of peer problems at school and contextual (home/school) variability in mood and self-esteem. A multiple regression analytic approach was used to address the association between peer problems and contextual variations in mood and self-esteem. According to the first hypothesis, children who report higher levels of peer problems at school during the week should also report higher levels of negative mood and lower levels of self-esteem at school that week, independent of their morning home reports of negative mood and self-esteem. As shown in Table 2, there were strong, significant correlations indicating that children who reported more peer problems also described more negative mood and lower state self-esteem at school. Two hierarchical multiple regression analyses tested the first hypothesis. In each multiple regression model, the main predictor was children's reports of peer problems. School negative mood and school state self-esteem served as the outcome variables in the two regressions. At step 1 in each analysis, the relevant morning variable (morning negative mood at home or morning state self-esteem at home) was entered as a control variable. Children's reports of peer problems were then entered at step 2 of the regression analysis. As shown in Table 3, reports of peer problems were associated with reports of more school negative mood after controlling for reports of morning negative mood at home ($\beta = .35$, $p < .001$). In the second regression analysis, reports of peer

Table 3
Hierarchical Multiple Regression Analyses Predicting Children's School Negative Mood and School State Self-Esteem From Levels of Peer Problems ($N = 83$)

Variable	*B*	*SE B*	β	*t*	Adjusted R^2	*F*
School negative mood						
Step 1						
Morning negative mood at home	.94	.05	.89**	17.57	.79	308.76
Step 2						
Morning negative mood at home	.70	.06	.66**	12.10		
Peer problems	.31	.05	.35**	6.34	.86	249.25
School state self-esteem						
Step 1						
Morning state self-esteem at home	.94	.05	.91**	19.83	.83	393.10
Step 2						
Morning state self-esteem at home	.85	.05	.82**	16.74		
Peer problems	–.17	.05	–.18*	–3.59	.85	231.83

*$p < .01$. **$p < .001$.

problems were negatively associated with reports of school state self-esteem after controlling for morning state self-esteem at home (β = –.18, $p < .01$). Additional hierarchical multiple regression analyses tested for gender differences in the two findings reported above. In regression models similar to those above, gender was entered at step 2 along with peer problems and the gender × peer problems interaction term was entered at step 3. The results of both the negative mood and state self-esteem analyses indicated no main effects of gender, as well as no interaction effects.

Thus, boys and girls who reported experiencing more problems with peers during the week also reported higher levels of negative mood and lower levels of self-esteem at school that week, independent of their morning at home reports of negative mood and self-esteem. The unstandardized betas from the regression analyses indicated that, after controlling for morning mood scores, a 1-unit increase in the average level of peer problems reported across the week of data collection was associated with a .31-unit increase in average school negative mood ($SD = .44$) and a decrease of .17 in school state self-esteem ($SD = .46$).

A different approach to addressing the association between peer problems and contextual variations in mood relies on analysis of variance. To further illuminate the findings presented above, a 2 × 2 mixed model analysis

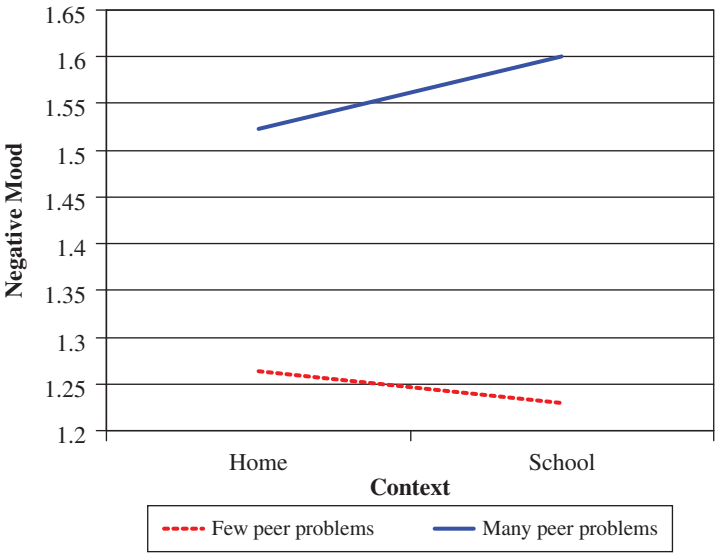
of variance was conducted with context (school vs. home) as a within-subject factor, peer problem group (two levels: the 29 students who reported peer problems on 3 or more days during the week vs. the 54 students who reported peer problems on fewer than 3 days during the week) as a between-subjects factor, and negative mood as the outcome. Results showed a significant main effect of peer problem group on negative mood, $F(1, 81) = 12.77$, $p < .001$. Children who reported more peer problems during the week also reported significantly more negative mood than did children who reported fewer problems with peers. This analysis also revealed a significant interaction between peer problem group and context, $F(1, 81) = 7.35$, $p < .01$. As shown in Figure 1, children who experienced more peer problems showed an average increase in negative mood from mornings at home to afternoons at school. However, negative mood decreased across these two contexts for the students who reported experiencing fewer peer problems at school that week. Thus, children who experienced relatively high levels of peer problems reported, on average, more negative mood while in school than while at home in the morning. On the other hand, those who did not experience high levels of peer problems at school showed a shift in the opposite direction: They reported less negative mood, on average, at school than they did at home in the mornings.

A similar analysis was conducted with state self-esteem as the outcome variable. This analysis revealed a significant main effect of peer problem group, $F(1, 81) = 4.36$, $p < .05$, such that the students who reported peer problems on 3 or more days also reported, on average, lower state self-esteem in the mornings than those who reported peer problems on fewer than 3 days. However, in this case, there was no significant interaction between context and peer problem group.

The main effect of peer problem group uncovered in these two ANOVAs replicates what has been demonstrated before in the peer problems literature: Children who experience peer problems are at risk for emotional distress and low self-esteem. The significant interaction between peer problem group and context in the prediction of negative mood provides support for the hypothesis that the kinds of social experiences children report at school influence their average shift in mood from the home context to the school context.

For exploratory purposes, two separate hierarchical multiple regression analyses tested whether peer problems predicted morning home states after controlling for school states. At step 1 in each analysis, the relevant school variable (school negative mood or school state self-esteem) was entered as

Figure 1
Graph Illustrating the Interaction Between Peer Problem Group and Context on Reports of Negative Mood



a control variable. Children's reports of peer problems were then entered at step 2 of the regression analyses. Morning states (morning negative mood at home or morning state self-esteem at home) served as the outcome variables in the two models. Reports of peer problems were not significantly associated with morning negative mood at home after controlling for school negative mood ($\beta = -.11$, *ns*). Similarly, peer problems were not associated with morning state self-esteem at home after controlling for school state self-esteem ($\beta = .06$, *ns*). Thus, whereas peer problems were associated with school states after controlling for morning at home states, peer problems were not independently associated with morning at home states after controlling for school states.

Peer Problems, Academic Problems, and Psychological Distress

Our second goal was to test the association between peer problems and negative mood and self-esteem at school, controlling for academic

problems. Two separate hierarchical regression analyses were used to test the second hypothesis. The analyses were similar to those that tested the first hypothesis; however, children's reports of academic problems were added to reports of peer problems at step 2 of the regression analyses. School negative mood and school state self-esteem served as the outcome variables. As shown in Table 4, children's reports of peer problems were positively associated with reports of school negative mood ($\beta = .30$, $p < .001$), even after controlling for reports of morning negative mood at home and academic problems. However, peer problems were not uniquely associated with children's reports of school state self-esteem. Interestingly, reports of academic problems were significantly and uniquely associated with both school negative mood ($\beta = .17$, $p < .01$) and school state self-esteem ($\beta = -.19$, $p < .001$). Thus, it appears that peer problems and academic problems are both uniquely associated with school negative mood, but only academic problems are uniquely associated with school state self-esteem.

Two more regression analyses were tested to examine the unique and combined contributions of morning psychological states to the prediction of both types of school events. Morning negative mood and morning state self-esteem were the independent variables in both analyses, and peer problems and academic problems each served as an outcome variable. Children's reports of morning negative mood were positively associated with peer problems at school ($\beta = .56$, $p < .001$) even with morning state self-esteem included in the analysis; however, morning state self-esteem did not uniquely predict peer problems ($\beta = -.17$, *ns*). A similar pattern was observed when academic problems served as the outcome. Morning negative mood uniquely predicted academic problems ($\beta = .62$, $p < .001$), but morning state self-esteem did not ($\beta = -.06$, *ns*). Thus, children's average negative mood in the morning at home independently predicted reports of both peer and academic problems at school, whereas children's average morning self-esteem predicted neither when negative mood at home was controlled. Thus, negative mood appeared to be the more reliable home predictor of problems at school, as indicated by both the magnitude of the correlations presented in Table 2 and the multiple regression results.

Finally, to assess gender differences in the above findings, two additional hierarchical multiple regression models were tested. The models were similar to those reported above with negative mood and state self-esteem as outcomes; however, gender was added to peer problems and academic problems at step 3 of the analyses and two gender interaction terms (gender × peer problems; gender × academic problems) were entered at step 4. No main effects or interaction effects were found for gender.

Table 4
Hierarchical Multiple Regression Analyses Predicting Children's School Negative Mood and School Self-Esteem From Levels of Peer Problems and Academic Problems (N = 83)

Variable	B	$SE\ B$	β	t	Adjusted R^2	F
School negative mood						
Step 1						
Morning negative mood at home	.94	.05	.89**	17.57	.79	308.76
Step 2						
Morning negative mood at home	.62	.06	.59**	10.16		
Peer problems	.27	.05	.30**	5.45		
Academic problems	.15	.05	.17*	3.07	.88	186.79
School state self-esteem						
Step 1						
Morning state self-esteem at home	.94	.05	.91**	19.83	.83	393.10
Step 2						
Morning state self-esteem at home	.82	.06	.79**	17.07		
Peer problems	–.08	.05	–.08	–1.51		
Academic problems	–.18	.05	–.19**	–3.78	.87	184.90

*$p < .01$. **$p < .001$.

Discussion

This study addressed the role that social problems at school might play in explaining contextual variations in children's psychological states, specifically, whether the kinds of negative peer events children report while at school can account for contextual variations (home/school) in mood and state self-esteem. As predicted, children who experienced more peer problems at school during the week showed, on average, a contextual shift toward more negative mood and feelings of less competence and self-worth from mornings at home to afternoons at school during the week of data collection. Thus, children who perceived more problems with peers, such as feeling excluded by friends or being teased, reported higher levels of negative mood and lower levels of state self-esteem at school. This association was significant even after controlling for morning reports of negative mood and state self-esteem, which were highly correlated with school reports of the same constructs. In other words, we know that psychological states at home strongly predict psychological states at school; however, the results of this study show that peer problems predict school states above and beyond what can be accounted for by morning states. Peer problems were also uniquely associated with higher

levels of negative mood at school after controlling for perceived academic problems, such as making a mistake in class or receiving a bad grade. Interestingly, peer problems no longer predicted state self-esteem in school when academic problems were controlled in a regression analysis. Academic problems appear to have a stronger or more direct impact on children's self-evaluations at school than do problems with peers.

Methodological Issues Addressed in the Current Study

The most widely used measures of psychological well-being ask children to report on their typical psychological states or on thoughts and feelings that have occurred over the past couple of weeks. In most studies, such measures are administered in a classroom setting and on only one occasion, or in the case of longitudinal studies, once or twice per year. Scores on these measures are used to characterize children's general psychological functioning across time and settings. While these studies using global measures of psychological functioning provide researchers with a practical and overall valid means of assessing average functioning, the current study addressed several methodological issues that have not been addressed in such research designs. First, children completed adjustment measures both while at home and while at school, allowing for an examination of contextual variations in negative mood and state self-esteem. Because recall can be strongly influenced by the assessment setting and by one's current psychological state, this study provides a more comprehensive assessment of adjustment outcomes compared with previous studies that were conducted only within the school context. If measures are administered within a school setting, higher correlations might be evident between peer problems and adjustment than would be the case if measures were administered within the home context. The current study calls into question the use of one score to represent a child's psychological functioning. Although typical adjustment measures and research designs can provide important information about a child's general or average level of functioning, they cannot reflect potentially important and meaningful fluctuations around that average across different contexts. It is noteworthy that in this study, reports of peer problems predicted subjective distress in school after controlling for morning psychological states at home, but peer problems did not predict subjective distress at home in the morning after controlling for school states. This pattern highlights the importance of considering context when examining predictors of psychological adjustment.

While the current study assessed predictors of contextual differences in mood and state self-esteem, another approach that can be taken with the type

of data collected here is to see whether individual children deviate from their typical patterns of mood and self-esteem on days when they experience problems with peers. This method would address different questions from those addressed in this article. For example, using data from this study, Lehman and Repetti (2007) recently conducted a within-subjects analysis of the effects of negative school events on children's subjective states and perceptions of parent-child interactions. They found that on days when children reported more academic or peer problems at school, they later described more aversive interactions with their parents. Interestingly, increases in anxiety and decreases in children's state self-esteem partially mediated this link. In another recent study, Nishina and Juvonen (2005) examined within-person change in daily mood as a function of experienced and witnessed peer harassment among a diverse sample of sixth-grade students. Participants reported increases in anxiety on days when they personally experienced, witnessed, or both experienced and witnessed peer harassment. Thus, the results reported here about contextual changes in mood and state self-esteem seem to be corroborated by recent studies using a within-subjects approach.

The Link Between Peer Problems and Subjective States

Previous research has found that problems in peer relationships are linked, both concurrently and longitudinally, to a variety of internalizing symptoms, such as depression, anxiety, and low self-esteem (Hawker & Boulton, 2000). The results of the current study, however, suggest that the association between peer problems and psychological adjustment might be more complex than originally assumed. Mood and self-esteem might vary across different social contexts depending on the types of peer events that children report experiencing while at school. Indeed, results of the current study suggest that children who report high levels of peer problems at school might manifest more negative mood and lower self-esteem while at school than they do at home in the morning. It is noteworthy that the home setting appears to provide at least some psychological relief for those children who report experiencing peer problems while at school. In severe cases, this pattern might lead to school refusal inasmuch as children who experience high levels of peer problems might want to avoid peers and the psychological distress associated with the school setting.

Academic Failure, Peer Problems, and Subjective States

Research on peer problems and psychological adjustment among children typically does not consider the impact of other negative events at school,

such as receiving a low grade or having a problem with a teacher. The current study addressed this shortcoming in the peer relations literature by examining whether there is something unique about peer problems in predicting negative mood and low self-esteem beyond other negative school events. The results differed for the two outcome measures of feelings reported at school. With respect to negative mood, our findings showed that peer problems were, in fact, a significant predictor, even after controlling for the effects of academic problems. Although academic problems were also associated with negative mood at school, their association with negative mood was weaker. Nonetheless, both peer problems and academic problems at school contributed a small amount of incremental variance in the prediction of school mood beyond prior morning mood.

Previous research has shown that children who experience problems in their peer relationships also manifest signs of low self-esteem (Hawker & Boulton, 2000). However, these studies have failed to control for other problems at school, such as academic difficulties. In the current study, peer problems significantly predicted low state self-esteem in school before controlling for academic problems. However, after adding academic problems in the regression analysis predicting state self-esteem, peer problems dropped out as a significant predictor. It appears that children's self-evaluations in school are more closely tied to academic performance than to social performance. Due to the saliency of academic achievement at school, it is perhaps understandable that children's feelings and thoughts about their competence and self-worth while at school would be closely tied to academic events. This might be particularly true of our sample, which consisted of primarily upper middle-class Caucasian students. Substantiation of this finding among lower class and minority populations is a task for future research. It could also be the case that the items we used to measure state self-esteem tapped self-beliefs that were more pertinent to the academic domain than to the social domain. Future research should examine the link between peer/academic problems and domain-specific self-evaluations across various contexts.

It is likely that academic and peer difficulties co-occur at school and that their association with negative mood is transactional. In the larger study from which this sample was drawn, a lack of peer acceptance in the fourth grade predicted lower academic performance in the sixth grade, a prospective association that was mediated by increases in the children's internalizing symptoms and declines in academic self-confidence in the fifth grade (Flook, Repetti, & Ullman, 2005). The data presented here indicate that both higher negative mood and lower state self-esteem reported in the mornings at home correlate with more reports of both types of negative events at school;

multiple regression analysis suggests that negative mood was the stronger of the two morning predictors. Clearly, a link between difficulties at school and psychological adjustment is not unidirectional. Although the primary aim of this article was to test the association between peer problems and negative mood, our findings also provide support for a link between academic problems and negative mood in the school context, and they point to the reciprocal nature of the association between mood and school events. Thus, the results call attention to the limitations of studying children's social experiences in isolation and argue for a broader study of the ecology of childhood problems in school.[1]

Limitations and Future Directions

The present study addressed several shortcomings in the extant literature. First, by relying on children's memory of events that occurred only within the past few hours, this study reduced recall errors and guarded against the effects of retrospective biases. It relied less upon children's long-term memory compared to methods that require participants to recall weeks or even months of psychological states and peer experiences. It also avoided the biases and errors involved in asking children to generalize across multiple situations and time points when reporting on school events and subjective states. In addition to avoiding these retrospective biases, the analyses reported here guarded against potential stable respondent biases in children's school reports by controlling for morning reports of mood and state self-esteem. This analytic strategy controlled for the fact that some children display a tendency to be more negative (or more positive) than others when completing self-report instruments. Aside from addressing methodological shortcomings in the literature, the current study represents a first step toward examining the predictors of contextual differences in children's psychological states.

Future research could benefit from examining the co-evolution of peer problems, academic problems, and subjective states over time. Although we were interested in peer and academic problems as predictors of average shifts in mood and self-esteem from one context to another, it is likely that the association between school events and subjective states is bi-directional. Children who manifest negative mood and low self-esteem in school might be more likely to face difficulties in social and academic situations. Indeed, these constructs probably co-evolve over time. Here, we attempted to address the issue of bi-directionality by controlling for morning reports of subjective states in our analyses. Moreover, we were particularly interested in average differences in mood between the home context and the school context. The

focus was not on within-person temporal change in these constructs. While future research should focus on untangling the bi-directionality of the constructs examined here, we believe that our results significantly contribute to the understanding of contextual variability in subjective states.

Lastly, we note that it would be interesting to examine the association between mood and state self-esteem on a daily basis. In the current study, these two variables were assessed as independent outcomes. However, research has shown that these two indices of adjustment are intricately linked, with fluctuations in state self-esteem being associated with more negative affect and potentially serving as a vulnerability factor in the emergence and maintenance of depression (Butler, Hokanson, & Flynn, 1994; Roberts & Monroe, 1994). Thus, future research could benefit from examining how state self-esteem (and its fluctuations within individuals) and school events might combine to predict negative mood or depressive symptoms.

While the current study made significant contributions to the existing literature, there were also significant limitations that should be addressed in future research. First, there are limitations to using intensive repeated data collection procedures. This methodology places an increased burden on participants compared with more traditional approaches that only require children to complete questionnaires once in an extended period of time. As a result, our sample size is relatively small. Another limitation of the current study involves the measure utilized to assess peer problems. This instrument measured general peer problems, but it did not allow for the assessment of various subtypes of peer problems. Future research should examine the association between psychological distress and different forms of peer problems, such as relational, physical, and verbal victimization. Finally, it will be important for researchers to carry out similar studies using larger, more diverse samples. The sample utilized in this study was relatively small and homogeneous, consisting primarily of Caucasian children from middle-class families. The extent to which the results reported here generalize to children of other ethnic and socioeconomic groups remains to be addressed in future research. Despite these limitations, the current study addressed several shortcomings in the extant literature. First, by relying on children's memory of events that occurred only within the past few hours, this study reduced recall errors and guarded against the effects of retrospective biases. It relied less upon children's long-term memory compared to methods that require participants to recall weeks or even months of psychological states and peer experiences. It also avoided the biases and errors involved in asking children to generalize across multiple situations and time points when reporting on school events and subjective states. In addition to avoiding these retrospective

biases, the analyses reported here guarded against potential stable respondent biases in children's school reports by controlling for morning reports of mood and state self-esteem. This analytic strategy controlled for the fact that some children display a tendency to be more negative (or more positive) than others when completing self-report instruments. Aside from addressing methodological shortcomings in the literature, the current study represents a first step toward examining the predictors of contextual differences in children's psychological states.

The current research suggests that peer relationships are important to attend to in school, in addition to academic problems, because they were associated with negative subjective states during school hours. In severe cases, the experience of negative states in school might lead to school refusal among children and adolescents. If additional research replicates the findings reported here, then it might be important to train educators to be aware of and have tools for preventing both peer and academic problems among their students.

Note

1. We are grateful to a reviewer for highlighting this point.

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Bridget M. Reynolds, MA, is a doctoral candidate in the psychology department at the University of California, Los Angeles. Her research focuses on adolescent mental health and examines the interrelations between psychological adjustment, pubertal development, and peer victimization.

Rena L. Repetti, PhD, is a professor in the psychology department at the University of California, Los Angeles. Her research adopts a social ecological perspective on children and families, one in which members' daily lives outside of the home are intimately intertwined with life inside the family.